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Empirical Analysis of Factors Affecting Inflation: A Case of Pakistan

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ABSTRACT

This study explored the relationship between foreign exchange & inflation for the period from 2000 to 2023. During this period, the Pakistani economy faced different periods of economic growth as well as recession. Particularly the global financial crisis from 2008 and the COVID-19 period which started in 2019 and still it shocks are still being realized by Pakistan's economy. In this study, we have focused on the relationship among the underlying factors like exchange rate, interest rate, import, export, and COVID-19 as the possible factors affecting inflation. The results of this study the independent variables show the exchange rate shows a significant relationship with inflation except the exchange rate. The interest rate shows a significant relationship with the interest rate 10 per cent significance level. The imports show a positive significant relationship with the dependent variable at a 5 per cent significant level. The exports show a negative relationship with inflation at a 5 per cent significant level. Therefore, it is pertinent to suggest that in order to control inflation the dependence on costly imports should be reduced while the exports should be encouraged so that the resulting increase in foreign exchange would reduce the inflation in the country. Similarly, the central bank can play its role slash the interest rates to control the inflation in the country.

INTRODUCTION

In past the global financial crisis, had severely affected the global economies with no exception to Pakistan. While recent COVID-19 has also similar impacts on the economies around the world. Many enterprises have faced different issues with the certain level of losses. Mostly the businesses faced issues such as cut in demand and supply, interruption of export orders as well as scarcity of export orders, and raw material dearth & interruptions of transportation between different locations. (Song & Zhou, 2020). After the covid-19 global economies face a rise the inflation rate thus raising the general price level (Harding et al., 2023). Studies have

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been done to find out factors causing inflation which is considered to be a phenomenon associated with the economies all around the world.

Studies have revealed that international trade opens door for the inflow and outflow of products and services which can put inflationary pressure the economy (Ascari et al., 2024). In the case of an open economy, the global trade effects inflation through imports and exports. According to Dexter et al., (2005), imports are one of the main causes of the rise in the level of inflation through rise in the domestic market prices. Similarly, the exports can also affect the domestic rise in the goods and services prices. The COVID-19 period caused shortage of supply of products and services from one country specially the shortage of raw materials like iron, wheat, sugar, and other things caused a general increase in the price level of different countries (Ahmed et al., 2018; Diaz et al., 2024).

Besides the global supply chain disruption during the crisis periods the exchange rate fluctuations and interest rates changes also occur which ultimately affect the inflation in the country. In Pakistan there are many studies in the past which have focused in the exchange rate & the relationship of the other variables. Gul and Awan (2017) analysed the impact of exchange rate of on Pakistan economy for the period from1970 to 2014. It finds that increasing inflation causes the problems of exchange rate fluctuations. The steady exchange rate can encourage the enterprises and financial organizations investment as well as it hedges the business risk (Bae et al., 2018). Differences the exchange rate might be having impact in the macro-economic factors like interest rate, commodity prices' workers' wages, employment and the output level. It eventually results in macro-economic imbalances that functions to the actual exchange rate depreciation to be accurate for the external inequities. Bae et al., (2018) found that the exchange rate uncertainty has significant effect on the inflation in different economies around the globe.

The history of exchange rate shows that Before the World War-I the global currencies were following gold standards majority countries' moneys continued connected by gold but afterward the World War-II, US dollars replaced gold as being the value setter for other currencies in a fixed proportion (Sussman & Wyplosz, 2024). However, in Pakistan the Pakistani currency was connected to United Kingdom Pond sterling the reference currency for Pakistani Rupee up to 1970 (Khan & Aftab, 1995). Afterwards In 1971 due to the growing effect of United State Dollar Pakistani Rupees was connected with the US Dollars. Pakistani currency faced devaluation in 1972 (Kemal & Alvie, 1975). Afterwards the global currencies including PKR were assumed free floating exchange rate system in demand and supply (market forces) determine the equilibrium price of the currencies (Khan & Aftab, 1995). As Pakistan has negative balance of trade with other countries due to which demand of dollar is usually higher than the supply. This demand-supply gap has caused continuous lack of foreign exchange reserves as well. The following graph in figure 1. Shows the increase in the exchange rate (PKR vs USD).

In past there is plenty of literature which focuses on the matter of the inflation. However, there was a gap from theoretical perspective which has been highlighted. In this study the determining factors of the inflation including exchange rate, inflation rate and the international trade (imports and exports) have been analysed for the period of 2000 to 2024. The proposed study has theoretical support from the well know theories of Irving Fisher's (Fisher, 1930), the Purchasing Power parity theory (Kadochnikov, 2013) and Wicksell effects (Wicksell, 1907). The expected results support the Wicksell effect rather than the fisher effect. The rest of the paper includes literature review, followed by methodology, results and discussion. In the last conclusions and recommendations have been given.

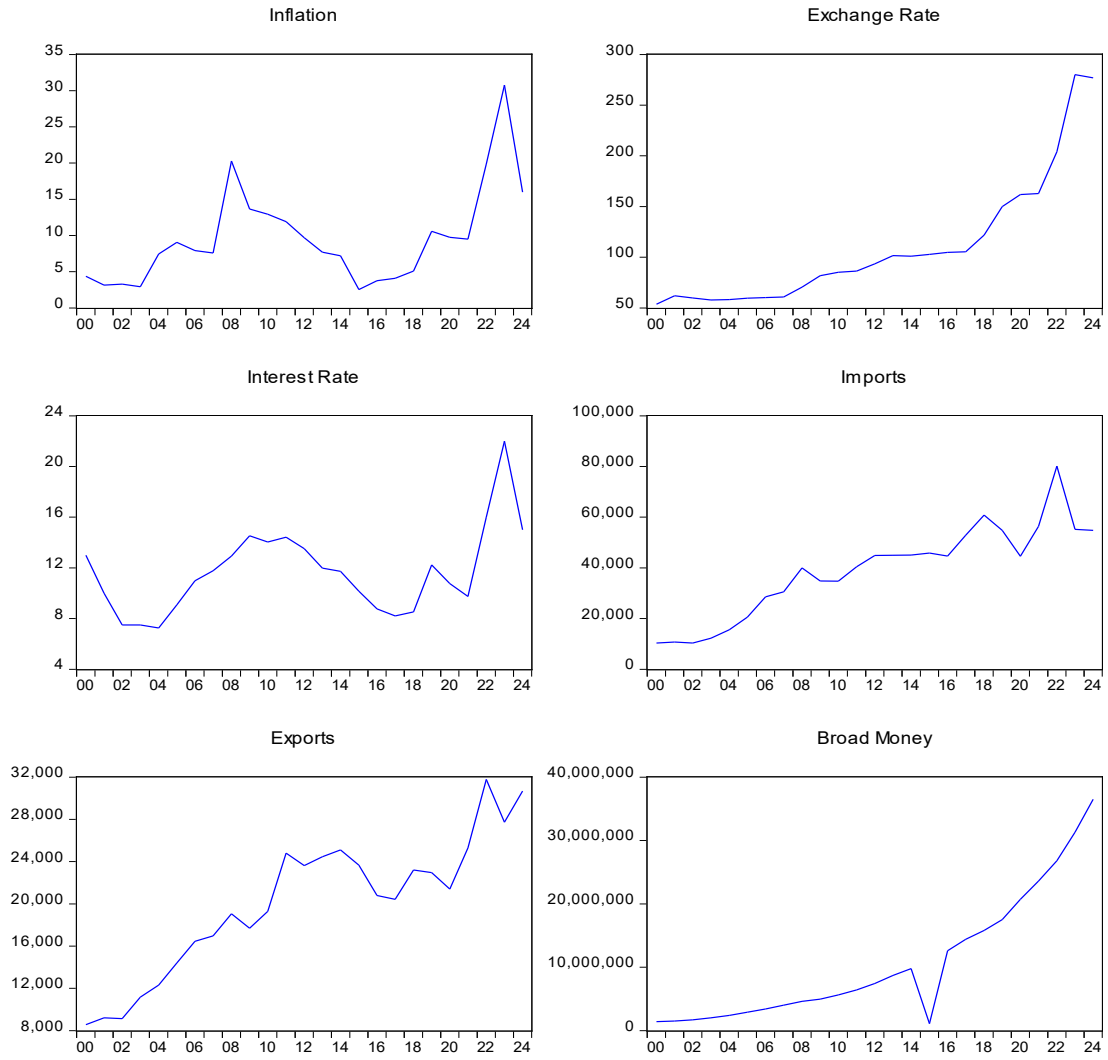

Fig. 1. The charts of the variables plotted over the time period (2000-2023)

LITERATURE REVIEW

In the past there has been theoretical and empirical research on the determinants of inflation which include money, and credit supply, interest rate, exchange rate among, international trade and others. Among the theoretical work the Irving Fisher's (Fisher, 1930) and the Purchasing Power parity theory (Kadochnikov, 2013) have been mentioned in the literature. The Irving Fisher's theory of interest is the economic theory that explains how the rate of interest is determined in a market economy. According to Fisher's theory, the rate of interest is determined by the supply and demand for funds. When the demand for funds is greater than the supply, the rate of interest will rise. Conversely, when the supply of loanable funds is greater than the demand, the rate of interest will fall.

Fisher's theory of interest also states that the rate of interest is influenced by the level of inflation in the economy. When the rate of inflation is high, people will be willing to accept a lower rate of interest on their loans because the value of their money will be decreasing over time. When the rate of inflation is low, people will be more willing to accept a higher rate of interest on their loans because the value of their money will be more stable. The Purchasing power parity (PPP) theory that compares the purchasing power of different currencies in different countries. It states that a unit of currency should be able to buy the same amount of goods and services in one country as it can in another country (Glantz & Kissell, 2014; Taylor & Taylor, 2002). Thus, the PPP theory measures the price of goods in different countries, connecting it with the international trade. Based on the above theories this study proposes the study investigating the effect of interest rate, exchange rate, and international trade on the inflation in Pakistan.

Moreover, among the empirical studies Iqbal et al., (2021) have researched the (Ahmed et al., 2018). This study investigated the relationship of different macroeconomic variables like inflation, exchange

rates, and F D I relationship of exchange rate and the import, export. These studies are about the symmetric relationship among exchange rates and the bilateral trade relationship of Pakistan and its trading relationship. This study used the ARDL approach to the prove J-curve effect on the relationship of the variables and found it true in different countries. Similarly, Faridi and Kausar (2016) used ARDL model to study impact of the currency on the devaluation trade balance of Pakistan. The authors used of yearly data ranging from, 1974-2014. Moreover, this study analysed the results to prove the J-curve effect exchange rates of the trade balance of Pakistan. This study included to inflation as an independent variable and determined that the inflation positively affects the international trade of Pakistan during the selected period.

Shaheen (2013) used inflation rates as independent variable to be determine its influence on exchange rate. The study finds there is an association between exchange rates of the inflation rates Pakistan. This study used the ANOVA and correlations techniques to find the relationship between the variables. Choudhri and Khan (2002) Confirms the notion that the devaluation of the currency is inflationary. The study utilized the data from years 1982-2001. The study found no significant connection between rupee devaluation and the inflation in Pakistan. However, short-run in the passing through effect the devaluation currency and inflation are negligible Pakistan. Ahmad et al., (2013) have used inflation and interest rates data from 1975 to 2011 as a measure of Pakistan's economic growth.

De Grauwe and Schnabl (2008) analyses effects the different exchange rate regimes in the inflation the southern Europe. The study finds the significant exchange rate impact on the level of inflation in the selected countries. The study period has been having been divided in different periods according to the different inflationary periods. Volkan et al., (2007) determined the effect of the changes of exchange rate of the domestic Inflation in Turkey. Different variables having been taken from different secondary sources. Real Exchange rates & CPI data have been retrieving international financial statistics of international monetary funds. The inflation has been used as the annual figures and the change in the prices have been used as the measure of inflation (Volkan et al., 2007). The study finds that the exchange rates augment inflation into the economy at manufacturers and consumer level respectively. However, the difference is found in the effects of the inflationary shocks at different levels of the supply Chain.

Among the empirical studies, Iqbal et al., (2021) used the ARDL approach to the prove J-curve effect on the relationship of the variables and found it true in different countries. Hoang et al., (2020) found the impact of exchange-rates, and inflation on the economic growth of the Vietnam economy. In this study among the other variables were used are exchange rate, Money supply, import, export, CPI and GDP. This study used VAR model using quarterly-data from 2005-2008. The results this study suggested that past inflation affect the current inflation persistently. Besides the money supply is the second major contributor to the CPI while other variables also affect the inflation in the country. While imports and exports affect the growth of economy in Vietnam.

Monfared and Akin (2017) analysed exchange rate and inflation effect period for the period ranging from 1976 to 2012. The study used Hendry method and the VAR models to analyse effect of the exchange rate on the inflation in the country. This Hendry method used the annual data while the VAR model used the quarterly data. The results of Hendry method found positive a relationship between the exchange-rate and inflation in Iran. Shaheen (2013) analysed of direction is exchange-rates volatility, and its impact the macroeconomic overall performances in Pakistan. This study implies there a direct-relationship between the exchange-rates volatility & the macro-economic performances of Pakistan. The study also analyses the effect exchange-rates volatility on-the inflation-rate. Using annual data, the study found there is a significant relationship-between the exchange-rates & inflation for the period from 2000 to 2020.

Ahmad and Ali (1999) the study theoretically determined the factors affecting this exchange rate & inflation, most part this study is based on the purchasing power-parity (P.P.P) theory. Khan and Gill (2010) worked on the causes of the different indicators of the Inflation. It is found that the negative changes in currency value, the increase in the import bills and the support price of the basic commodities caused the increase the different inflation indicators like C.P.I, SPI, WPI & G.D.P deflator. This study extensively included various indicators of the inflation and their causes. The results for four independent variables representing the inflation were regressed with different variables. The results of all of the regressed variables were almost similar.

In developing countries, the imported inflation is a major booster to the domestic inflation. The inflation is Pakistan has been trending since 1970s which correlates with the currency devaluation. This study used error the correction-model is identify of relationship-between the variables. This results show is short-run relationship-between the inflation & exchange-rates, however it does not validate the long-run relationships between the exchange-rate and inflation (Siddiqui & Akhtar, 1999). Moreover, the relationship of exchange-rate in the inflation Turkish-economy during two different periods of exchange rate have been identified. In this study Impulse-response function has been used to determine effect of different shock from exchange-rates the inflation in-the Turkish economy. Similarly, studies on the relationship of inflation and the other macroeconomic variables have as used Vector Auto regression (VAR)model (Volkan et al., 2007).

Olamide et al., (2022) model the effect of different macroeconomic variables like inflation, exchange-rates volatility on-the economic growth is south-African development community (SADC). Different techniques have been used in this study like pooled mean group (P.M.G) estimation, generalized moments, & dynamic fixed-effect methods. Further GARCH model was also employed to achieve the study objectives. The finding major finding of this study show is there an inverse relationship-between the economic growth & the inflation. Similarly, the-relationship of the exchange rates changes & the economic-growth are also inverse. This study also made use of ARDL model.

Mahonye and Zengeni (2020) focused on the inflationary effect of the home currency devaluation in Zimbabwe during the period from 1999 to 2006. The quarterly data were chosen for the study. The study utilizes the regression, and Vector-error-correction model (VECM). Other studies have also used models analyse the various empirical aspects of the variables like inflation, exchange-rate, and output growth (Engle & Granger, 1987). Gul and Awan (2017) have utilized ARCH, and simple regression models. ARCH model has been used to determine the volatility phenomenon in the data. The results show that the foreign exchange reserves, government spending, inflation and supply of money in economy have negative relationship with the exchange-rate volatility. Chaudhry et al., (2011) found a relationship between the foreign the exchange reserve, inflation focus on Pakistan experience since-1960. The study use of the ARDL approach to find the long-term relationships. is found the there is a relationship between the foreign exchange reserves. This rise the foreign-exchange reserves have decreases inflation rate is Pakistan.

Theoretical Framework and Hypothesis

Inflation refers to the general increase in the price level of goods and services in an economy over time. Inflation can be influenced by both domestic and international factors, making it a multifaceted economic indicator. In the literature review the relationship among the inflation, exchange rate, interest rate, import and export has been established. More specifically the relationship between exchange rate and the price level of the good has been explained in the purchasing power parity (PPP) theory while the inflation and interest rate have been explained is fisher in 1930s (Şen et al., 2020). Dornbusch (1976) explained the relationship between exchange-rate and inflation rates. A change in the exchange rate affect the price of imports and exports which ultimately affect inflation. Similarly, Agénor and Montiel (2015) explained four transmission mechanism to understand the transmissions mechanism of the exchange-rate to the prices thus affecting inflation. First the open economy is subject to change the price consumer goods due exchange rate, second in the final goods are affected by the imported raw material. Third the uncertainty or the fluctuations the foreign currency affects the prices in the domestic markets. Finally, the wages in foreign market also effect of the prices in domestic markets which is transmitted in local markets through the foreign exchange rate changes.

Fisher has initially established a relationship between the inflation and the interest rate in which inflation affects the nominal interest rate. Inversely Wicksell effects state that interest rate affects the inflation (Wicksell, 1907; Anari & Kolari, 2016) However, interest rate has become a primary tool for monetary policy of any country. Increase in the interest rates typically reduce consumer spending and investment, which can lower inflationary pressures. Conversely, lower interest rates can stimulate economic activity, potentially increasing inflation. Mirza and Rashidi (2018) found a bidirectional causal relationship between the inflation and the interest rate. The interrelationship of the foreign trade with the other macroeconomic variables have been discussed in different theories. More specifically, Çütcü

(2020) stated that the practical relationship of the inflation and the foreign trade has been developed by the Keynesian Demand Function in which it is stated that the export increase the demand of goods and services in a country thus causing the domestic prices to increase. Similarly, the imports affect negatively the demand of goods and services in an economy. Göçer and Gerede (2016) points out that in the free economies domestic demand is augmented by the exports which affect the general price level. Contrary to the exports the imports exert negative pressure on the domestic demand thus reducing the inflation. However, there studies which have found relationship between the globalization, trade term, trade openness and inflation (Gao et al., 2024; Atabey & Karakuş, 2022). Based is above discussion, we propose the following hypotheses for the effects of exchange rate, interest rate, imports and exports on the inflation.

H_1: There is relationship-between inflation and exchange-rate

H_2: There is relationship-between inflation & interest-rate

H_3: There is relationship between inflation & Import

H_4: There is relationship-between inflation & Export

H_5: There is relationship-between inflation & Broad Money

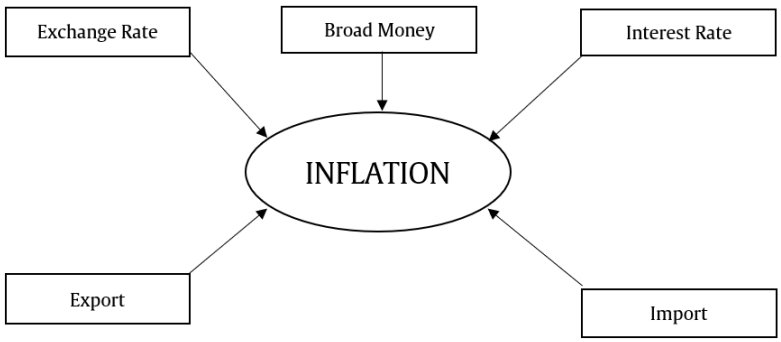

Fig. 2. Theoretical framework of the Relationship of inflation with other variables

METHODOLOGY

Data Collection

The data for the variables like Exchange rate, inflation, interest rate, exchange rate, import, export and Broad Money selected for this study were taken from secondary sources. This study uses the yearly data for the selected variables. The selected period ranges from 2000 to 2024. The data for the interest rate, inflation rate was taken from the World Bank economic database. The data for the import and export of Pakistan were selected from the International Monitory Fund (IMF) trade statistics. While the data for the exchange rate were taken from web sources. The data for money supply were taken from the state Bank of Pakistan. The data series were transformed into logarithmic values.

Econometric Tests

In this research prime aim of this model is to include the variables affecting the inflation based on the literature review. We selected C P I Inflation as dependent variable while Exchange-rates, interest rate, exports, imports and Broad Money (Money supply) were taken as independent variables. In this study we used the Ordinary Lest Squire (OLS) regression model to find the effect of Exchange-rates, interest rate, exports, imports and Broad Money on inflation (Nguyen et al., 2022). Moreover, the preliminary test like descriptive statistics were applied before the Regression Model.

$$INF = \beta_0 + \beta_1 ER + \beta_2 IR + \beta_3 IM + \beta_4 EX + \beta_5 BM + u_i \quad (1)$$

Where:

INF = Inflation

ER= Exchange rate

IR= Interest Rate

IM= Imports

EX=Exports

BM=Broad Money (Money Supply)

Ui = Error Term

RESULT & DISCUSSION

Descriptive-Statistics

The descriptive statistics were applied to the raw form of data before applying the logarithmic transformation. The results of the descriptive statistics show that the Mean value of inflation is 9.64 while the maximum value is 30.76. The minimum rate of inflation during the period remained 2.52. The positive values of skewness demonstrate that the tails of the distribution on the right side of distribution are longer than the left side. The Mean and median values are greater than mode. The Kurtosis values greater than 3 shows that the series is not normal. The exchange rate shown in nominal terms having mean value 110.488 while the median value is 93.39. The maximum value of the exchange rate series is 280 it means that the highest value of the dollar in the selected period was 280.

The Kurtosis values is less than 3 shows that the series is normal. The interest rate shows that maximum value is 22. Median value is 11.73 while the minimum values is 7.25. The Kurtosis values is greater than 3 shows that the series peaks above the normal. The Exports have mean values is 20006.24 while median value is 44553 ranging from maximum value 80136 to minimum value 10309. The Kurtosis values for import is less than 3 shows that the series is normal. Import mean value is median value for export is 38951 while maximum value is 80136 and minimum value is 10309. The Kurtosis values for export is less than 3 shows that the series is normal. The broad money has the mean value 10684000, maximum value is 36500000 and the minimum value of 1100000. Kurtosis value surpassed 3 which shows that the peak of the series is a bit taller than the normal range.

Table 1

Results of the Descriptive Statistics

	Inflation	Exchange rate	Interest rate	Exports	Imports	Broad money
Mean	9.640	110.488	11.665	20006.24	38951.24	10684000
Median	7.921	93.395	11.730	20787.00	44553.00	6410000.
Maximum	30.768	280.000	22.000	31782.00	80136.00	36500000
Minimum	2.529	53.648	7.257	8569.000	10309.00	1100000.
Std. Dev.	6.621	63.831	3.332	6521.080	18149.80	10171214
Skewness	1.497	1.540	1.068	-0.231	-0.052	1.115
Kurtosis	5.340	4.572	4.721	2.262	2.541	3.184
Jarque-Bera	15.050	12.465	7.848	0.789	0.230	5.218
Probability	0.000	0.001	0.019	0.673	0.891	0.073
Sum	241.014	2762.214	291.647	500156.0	973781.0	2.678
Sum Sq. Dev.	1052.278	97785.76	266.567	1.029	7.919	2.485
Observations	25	25	25	25	25	25

Regression Result

After the descriptive analysis the data were analysed using the using ordinary least squire (OLS) model. Based on the five hypotheses defined in literature review section, the results do support the hypothesis as the probability value of the coefficient associated with the exchange rate is significant at 10 percent level, it can be deduced that the inflation is not directly associated with the exchange rate growth during the selected period. In Pakistan the currency rate fluctuations have been quite frequent. If we compare exchange rate to the inflation the inflation rate has been continuously increased which show that the inflation rate has not increased due the exchange rate fluctuations. The second hypothesis is about the association of the inflation and the interest rates in Pakistan during the selected period of the study is supported by the results of the study. Inflation shows a high level of association with the

interest rate as the probability value associated with the effect of the interest rate on the inflation is highly significant (0.000). It is concluded from the results of the study that the high level of the interest rate (borrowing rate) makes is costly for producers as wells as retailers to increase the price level of the product in the country. Thus, the Wicksell effects (1907) has also been proved. Moreover, to control the inflation measures should be taken to lower the interest rate in Pakistan.

Moreover, the regression results reveal that among the independent variables interest rate, and the exports show a significant positive relationship with all of the independent variables. While the exchange rates and the imports doesn't show a significant effect on the inflation. The imports as well as exports doesn't show significant relationship with the dependent variable at 5 percent significant level. The money supply (Broad Money) shows significant relationship with the inflation at 5% significance level. Broad money is considered one of the major determinants of the inflation. It shows that with the increase in the money supply the inflation will also increase. The results of this study are in conformity with the previous studies (Nguyen et al., 2022; Shen & Dong, 2019). Further, this study establishes a relationship of the inflation and the interest rate in which interest rate affects the inflation which is in conformity of the Wicksell effects (Wicksell, 1907) and, contradictory to the fisher effect (1930). The values of the R squire and adjusted R squire are above the 0.70 which show that the model is good fitted to the data. Thus, the model has good explanatory power. The results are shown in the table.2 below. The results reveal the devaluation of the currency has not contributed to the increase in the hyperinflation in Pakistan.

Table 2

Results of the Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Exchange rate	-0.684	0.370	-1.846	0.0805*
Interest rate	1.695	0.346	4.898	0.0001***
Imports	-0.409	0.563	-0.727	0.475
Exports	0.648	0.932	0.695	0.4950
Broad money	0.474	0.173	2.728	0.0133**
C	-8.480	3.879	-2.186	0.0415**
R-squared	0.744	Mean dependent var		2.059
Adjusted R-squared	0.676	S.D. dependent var		0.660
S.E. of regression	0.375	Akaike info criterion		1.084
Sum squared resid	2.678	Schwarz criterion		1.376
Log likelihood	-7.555	Hannan-Quinn criter.		1.165
F-statistic	11.052	Durbin-Watson stat		1.168
Prob(F-statistic)	0.000			

CONCLUSION

Pakistan has just experienced one of the highest levels of inflation in its 76-year history. The recent spate of inflation started in with the advent of covid-19 and economic reforms due to IMF program. In Pakistan the imports and export create supply chain disruption in the country which affect the inflation as well. In this study we analysed the effect of the exchange rate, interest rate, import, exports, and broad money on the inflation in Pakistan with this end yearly data of the selected variables were collected. Based on the results we found that the exchange rate has a negative effect on the inflation while, interest rate and money supply have a positive relationship with the inflation in Pakistan which shows that the inflation is causes by the excessive increase in the money supply. The supply of money as well as the interest rate are the monitory policy tools that are under the control of the state bank of Pakistan. Therefor it's the price responsibility of the government, and the state bank can play their role to reduce the inflation rates in Pakistan. It is suggested to tightening the monitory policy to decrease the inflationary pressure in the economy. Moreover, the fiscal policy measure can also play its role in controlling the inflation in Pakistan as the fiscal deficit may affect the money supply which can affect the aggregate demand in the country.

Competing Interests

The authors declared no competing interests.

REFERENCES

Agénor, P.-R., & Montiel, P. J. (2015). Development macroeconomics *Development Macroeconomics*: Princeton University Press.

Ahmad, A., Ahmad, N., & Ali, S. (2013). Exchange Rate and Economic Growth in Pakistan (1975-2011). *Journal of Basic and Applied Scientific Research, 3*(8), 740-746.
https://mpra.ub.uni-muenchen.de/id/eprint/49395

Ahmad, E., & Ali, S. A. (1999). Relationship between exchange rate and inflation. *Pakistan Economic and Social Review*, 139-154.
https://www.jstor.org/stable/25825193

Ahmed, R. R., Ghauri, S. P., Vveinhardt, J., & Streimikiene, D. (2018). An empirical analysis of export, import, and inflation: a case of Pakistan. *Romanian Journal of Economic Forecasting, 21*(3), 117-130.

Anari, A., & Kolari, J. (2016). Dynamics of interest and inflation rates. *Journal of Empirical Finance, 39,* 129-144.
https://doi.org/10.1016/j.jempfin.2016.08.008

Ascari, G., Bonam, D., & Smadu, A. (2024). Global supply chain pressures, inflation, and implications for monetary policy. *Journal of International Money and Finance, 142*, 103029.
https://doi.org/10.1016/j.jimonfin.2024.103029

Atabey, A. Ö., & Karakuş, M. (2022). Empirical Analysis of the Relationship Between Inflation, Foreign Trade, and Economic Growth for Türkiye. *Cumhuriyet University Journal of Economics & Administrative Sciences/Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi, 23*(3), 747-759.

Bae, S. C., Kwon, T. H., & Park, R. S. (2018). Managing exchange rate exposure with hedging activities: New approach and evidence. *International Review of Economics & Finance, 53*, 133-150.
https://doi.org/10.1016/j.iref.2017.10.017

Chaudhry, I. S., Akhtar, M. H., Mahmood, K., & Faridi, M. Z. (2011). Foreign exchange reserves and inflation in Pakistan: Evidence from ARDL modelling approach. *International Journal of Economics and Finance, 3*(1), 69-76.

Choudhri, E. U., & Khan, M. S. (2002). The exchange rate and consumer prices in Pakistan: Is rupee devaluation inflationary?. *The Pakistan Development Review*, 107-120.
https://www.jstor.org/stable/41260456

Çütcü, İ. (2020). Relationship between Inflation and foreign trade: An econometric analysis with structural break between the EU-28 countries and Turkey. *Akademik Araştırmalar ve Çalışmalar Dergisi (AKAD), 12*(22), 260-275.
https://doi.org/10.20990/kilisiibfakademik.710200

De Grauwe, P., & Schnabl, G. (2008). Exchange rate stability, inflation, and growth in (South) Eastern and Central Europe. *Review of Development Economics, 12*(3), 530-549.
https://doi.org/10.1111/j.1467-9361.2008.00470.x

Dexter, A. S., Levi, M. D., & Nault, B. R. (2005). International trade and the connection between excess demand and inflation. *Review of International Economics, 13*(4), 699-708.
https://doi.org/10.1111/j.1467-9396.2005.00532.x

Diaz, E. M., Cunado, J., & de Gracia, F. P. (2024). Global drivers of inflation: The role of supply chain disruptions and commodity price shocks. *Economic Modelling, 140*, 106860.
https://doi.org/10.1016/j.econmod.2024.106860

Dornbusch, R. (1976). Expectations and exchange rate dynamics. *Journal of political Economy, 84*(6), 1161-1176.
https://doi.org/10.1086/260506

Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: representation, estimation, and testing. *Econometrica: journal of the Econometric Society*, 251-276.
https://doi.org/10.2307/1913236

Faridi, M. Z., & Kausar, R. (2016). Exploring the existence of J-curve in Pakistan: An empirical analysis. *Pakistan Journal of Social Sciences, 36*(1), 551-561.

Fisher, I. (1930). *Theory of interest as determined by impatience to spend income and opportunity to invest it*: Augustusm Kelly Publishers, Clifton.

Gao, L., Abbas, S. K., & Lan, H. (2024). Globalization and inflation dynamics: evidence from emerging economies. *Applied Economics, 56*(42), 5072-5089.
https://doi.org/10.1080/00036846.2023.2244239

Glantz, M., & Kissell, R. (2014). Chapter 7-foreign exchange market and interest rates. *Multi-Asset Risk Modeling. San Diego: Academic*, 217-46.

Göçer, İ., & Gerede, C. (2016). Dış Ticaretin Enflasyon Üzerindeki Etkileri: Türkiye İçin Zaman İçinde Değişen Birim Kök ve Nedensellik. *Eskişehir Osmangazi Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 11*(2), 25-46.

Gul, A., & Awan, A. G. (2017). Exchange rate volatility and its impact on Pakistan's international trade. *Golabal Journal of Management and Social Sciences, 3*(4), 1-18.

Harding, M., Lindé, J., & Trabandt, M. (2023). Understanding post-COVID inflation dynamics. *Journal of Monetary Economics, 140*, S101-S118.
https://doi.org/10.1016/j.jmoneco.2023.05.012

Hoang, T., Thi, V., & Minh, H. (2020). The impact of exchange rate on inflation and economic growth in Vietnam. *Management Science Letters, 10*(5), 1051-1060.

Iqbal, J., Nosheen, M., Rehman Panezai, G., & Salahuddin. (2021). Asymmetric cointegration, Non-linear ARDL, and the J-curve: A bilateral analysis of Pakistan and its trading partners. *International Journal of Finance & Economics, 26*(2), 2263-2278.
https://doi.org/10.1002/ijfe.1905

Kadochnikov, D. V. (2013). Gustav Cassel's purchasing power parity doctrine in the context of his views on international economic policy coordination. *The European Journal of the History of Economic Thought, 20*(6), 1101-1121.
https://doi.org/10.1080/09672567.2013.824999

Kemal, A. R., & Alvie, Z. (1975). Effect of 1972 devaluation on Pakistan's balance of trade. *The Pakistan Development Review, 14*(1), 1-22.
https://www.jstor.org/stable/41258265

Khan, R. E. A., & Gill, A. R. (2010). Determinants of inflation: A case of Pakistan (1970-2007). *Journal of Economics, 1*(1), 45-51.

Khan, S. R., & Aftab, S. (1995). *Devaluation and the balance of trade in Pakistan: A policy analysis.* Sustainable Development Policy Institute.

Mahonye, N., & Zengeni, T. (2020). Exchange rate impact on output and inflation: A historical perspective from Zimbabwe. In *Engineering Design and Mathematical Modelling* (pp. 75-86). Routledge.

Mirza, A., & Rashidi, M. (2018). Causal relationship between interest rate and inflation rate: A study of SAARC economies. *Kardan Journal of Economics and Management Sciences, 1*(2), 157-169.

Monfared, S., & Akin, F. (2017). The relationship between exchage rates and inflation: the case of Iran. *European Journal of Sustainable Development, 6*(4).
http://doi.org/10.14207/ejsd.2017.v6n4p329

Nguyen, V. A. T., Hoang, T. T., & Le, D. A. (2022). A study on the relationship between money supply and inflation in Vietnam from 2005 to 2021. *Accounting, 8*(4), 395-402.

Olamide, E., Ogujiuba, K., & Maredza, A. (2022). Exchange rate volatility, inflation and economic growth in developing countries: Panel data approach for SADC. *Economies, 10*(3), 67.
https://doi.org/10.3390/economies10030067

Şen, H., Kaya, A., Kaptan, S., & Cömert, M. (2020). Interest rates, inflation, and exchange rates in fragile EMEs: A fresh look at the long-run interrelationships. *The Journal of International Trade & Economic Development, 29*(3), 289-318.
https://doi.org/10.1080/09638199.2019.1663441

Shaheen, F. (2013). Fluctuations in exchange rate and its impact on macroeconomic performance of Pakistan. *The Dialogue, 8*(4), 410-418.

Shen, S., & Dong, X. (2019). The structural relationship between Chinese money supply and inflation based on var model. *Applied Mathematics, 10*(7), 578-587.

Siddiqui, R., & Akhtar, N. (1999). The impact of changes in exchange rate on prices: A case study of Pakistan. *The Pakistan Development Review*, 1059-1066.
https://www.jstor.org/stable/41260221

Song, L., & Zhou, Y. (2020). The COVID-19 pandemic and its impact on the global economy: what does it take to turn crisis into opportunity?. *China & World Economy, 28*(4), 1-25.
https://doi.org/10.1111/cwe.12349

Sussman, N., & Wyplosz, C. (2024). Exchange rate regime choices in small open economies from Bretton Woods to inflation targeting. *Comparative Economic Studies, 66*(3), 394-414.
https://doi.org/10.1057/s41294-024-00237-x

Taylor, A. M., & Taylor, M. P. (2002). The purchasing power parity debate. *Journal of Economic Perspectives, 18*(4), 135-158.
https://doi.org/10.1257/0895330042632744

Volkan, A., Saatçioğlu, C., & Korap, L. (2007). *Impact of exchange rate changes on domestic inflation: The Turkish experience* (No. 2007/6). Discussion paper.
https://hdl.handle.net/10419/81633

Wicksell, K. (1907). The influence of the rate of interest on prices. *The Economic Journal, 17*(66), 213-220.
https://doi.org/10.2307/2220665